

Date:

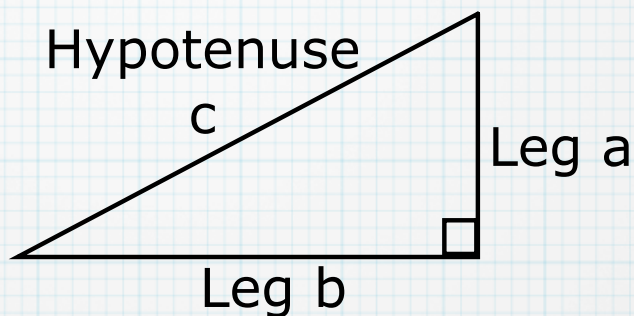
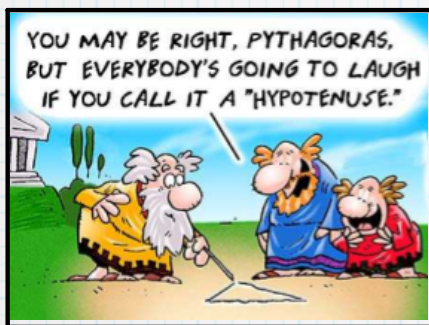
Title: The Pythagorean Theorem

Objective: Use the Pythagorean Theorem to solve problems in length and distance.

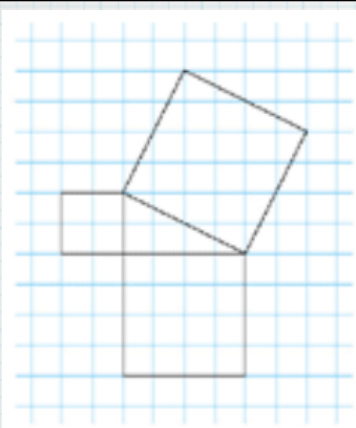
IN:

Talk with your neighbor(s) and come up with a list of things you remember about the Pythagorean Theorem. You can use a book, if you need it. Each group needs AT LEAST 5 ideas written down!

Parts of a right triangle - a review



The hypotenuse is always opposite the right angle.
In a right triangle, which side is always the longest?



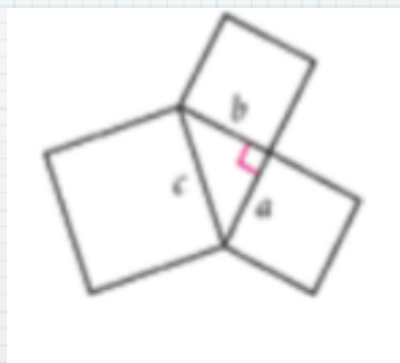
What is the definition of the Pythagorean Theorem?

Why do we use the Pythagorean Theorem?

The Pythagorean Theorem

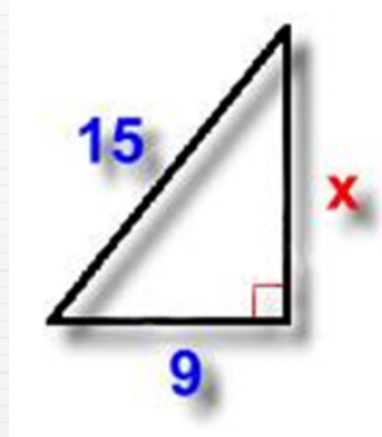
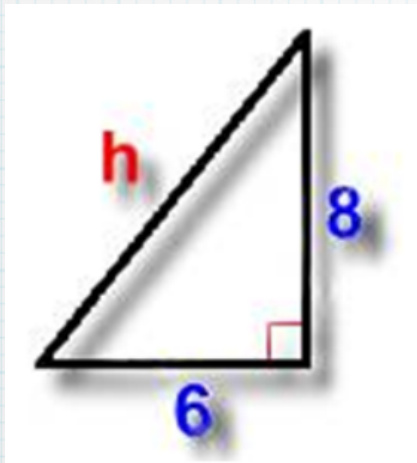
The sum of the squares of the lengths of the legs a and b of a right triangle equals the square of the length of the hypotenuse c .

$$a^2 + b^2 = c^2$$



PRACTICE

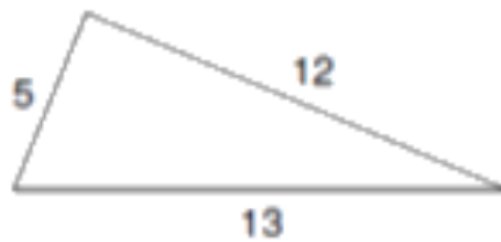
Find the missing side length. Show all work!



1)

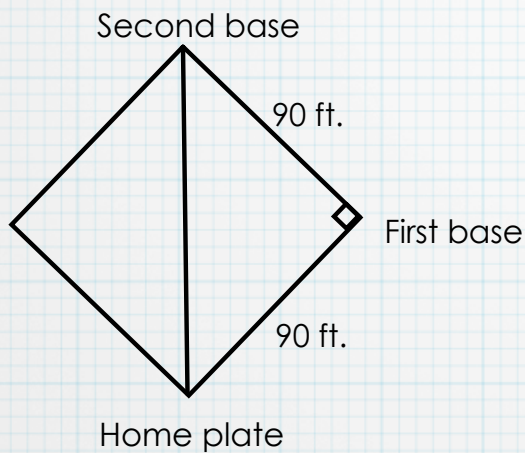


2)



Are these right triangles?

BASEBALL DIAMOND

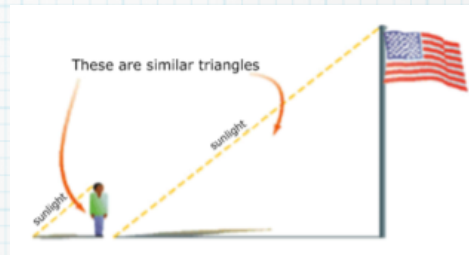


A baseball diamond is a square with 90 ft between first and second base. What is the distance from home plate to second base?

FLAG POLE

When objects block sunlight, they cast shadows, and similar triangles are formed. On a sunny day, Mrs. Bashford and Mrs. Bonger measure the shadow of the school flagpole. It is 48 ft. long.

Mrs. Bonger is 5 ft. tall and her shadow is 12 ft. long.



- Sketch and label your OWN diagram to represent this situation.
- Using the similar triangles in your diagram, write a proportion and find the height of the flagpole.
- Explain how you could use this method to find the height of a very tall tree.

SOLVING EQUATIONS

Miya was trying to solve the problem $x^2 + 4^2 = 5^2$. She took the square root of both sides and got $x + 4 = 5$, which means x equals 1. Explain why her answer is wrong, and show how to find the correct answer.

OUT:

Create a REAL problem that would use the Pythagorean Theorem in order to solve!

SUMMARY: The main idea here was...

HOMEWORK: Pythagorean Theorem Worksheet